ABSTRACT

[0139] An authentication protocol (AP) of authenticating the connection and the exclusive and mutual cooperation of a specific software (SW) stored in and executed by a personal computer (PC) or a network personal computer (NPC) interconnected with a sewing machine (SM) and utilizing a standardized communication link (CL). Actualization of this is achieved, by evaluating and validating special data signatures generated, transmitted or received by each of personal computer (PC) and sewing machine (SM). The fixed sequence of transmitting and receiving said data signatures is comprised of the following steps: personal computer (PC) initializes authentication by issuing and sending authentication initialize signature (AI) to sewing machine (SM); if sewing machine (SM) is in an appropriate state, it issues and sends to personal computer (PC), an authentication acknowledge data signature (ACK). Sequentially, sewing machine (SM) issues and sends request data signature (AQD) to personal computer (PC); personal computer (PC) then issues and sends authentication response signature (ARS) to sewing machine (SM) sequentially followed by the issue and the transmission of an authorization response data signature (ARD). On the final step, sewing machine (SM) issues and sends authentication confirm signature (ACD) to inform the personal computer (PC) that the connection is authenticated and correctly established. If any of said authentication data signatures (AI), (ACK), (AQD), (ARS), (ARD), (ACD) is corrupt, missing or invalid, sewing machine (SM) function is suspended; software (SW) execution is halted or terminated.